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**FISHERIES**

# Southeast Hedonic Analysis

David W. Carter  
Southeast Fisheries Science Center  
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# Project Objective

Estimate the value of fish harvested on offshore charter trips in the Gulf of Mexico

# Charter Fee Hedonic

- Trip length
- Number of passengers
- Vessel length
- Fished in EEZ?
- Bottom fishing?
- County-level harvest characteristics averaged over all species
  - Keep per angler hour fished (KPUE)
  - Weight (kg) per fish kept (W)

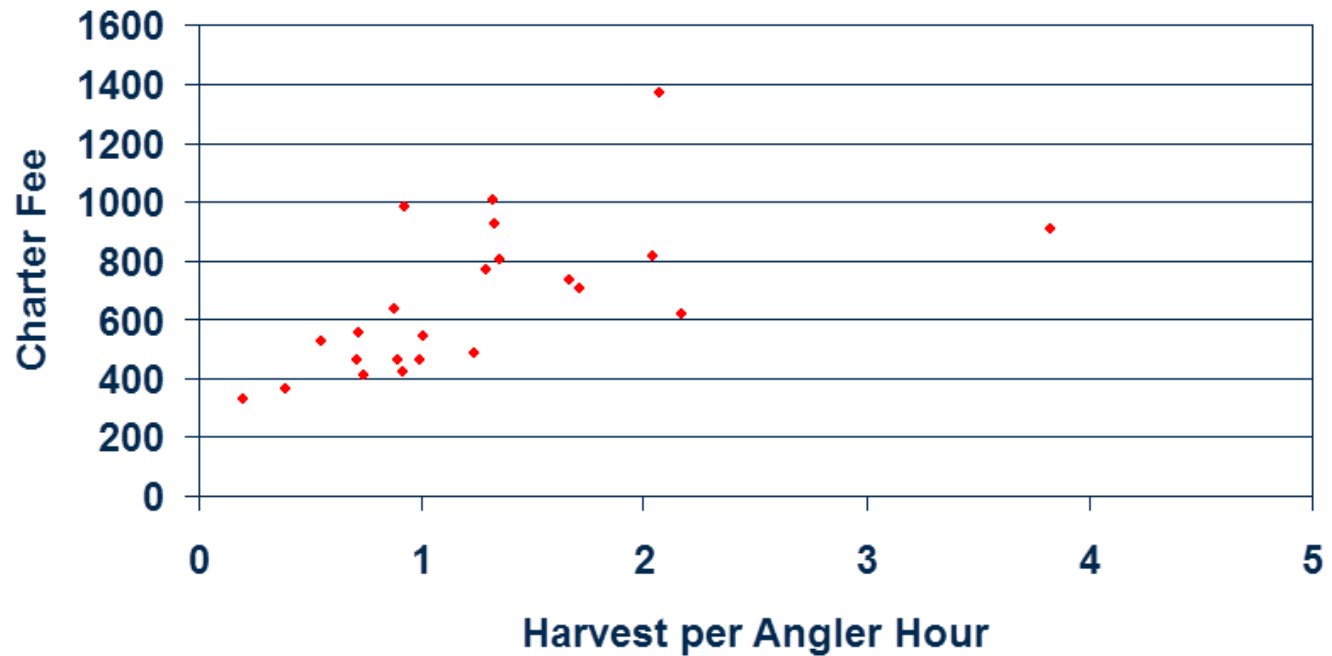


# Gulf of Mexico Data

- Charter fees
  - MRFSS Weekly FHS Add-on in 2002/03
  - 356 vessels
  - 584 offshore trips (mean Fee  $\approx$  \$700)
- Mean harvest attributes for 23 county zones
  - 1992-2001 MRFSS intercepts
  - 13,025 offshore charter trips
  - 109,989 fish measured



# County Average Charter Fees and Harvest per Angler Hour



# Estimation Issues

- Omitted variables
  - Factors that vary across counties and affect both charter fees and harvest characteristics
  - Biased parameters on harvest characteristics
- Correlation within counties (ICC)
  - Fee (32%), Passengers (34%), Duration (20%), Vessel Length (30%), EEZ (11%), Bottom (24%)
  - Keep per angler hour (100%), weight per fish (100%)
  - Biased (underestimated) standard errors



# Specification and Estimation

- Specification
  - Dependent:  $\ln(\text{Charter Fee})$  per trip
  - Independent
    - quadratic in trip duration and passengers; interaction
    - EEZ, bottom, and interaction
    - $\ln$  of county-average KPUE and W
- Estimator: LSDV/Minimum Distance (Wooldrige)
  - Omitted variable correction: County-average trip variables

# Why is this project needed?

- Economic effects of sportfishing policy changes
- Compare the relative value of a fish across sectors
- Economic efficiency of fishery allocations



# Reason for a special study

- Investigate an alternative to the typical sportfish valuation methods
- “Travel cost methods cannot stand alone” (Randall LE 2004)
- Hypothetical bias in SP
- New hedonic method is based on market prices

# Description of the Data

- One time add-on to the MRFSS Weekly FHS Add-on
- Convenient source of fee information along with trip attributes

# Results I

- Models explain 80% of the variation in charter fees
- Harvest characteristic parameters: KPUE, W
  - Without omitted variables correction: 0.128, .191
  - With omitted variables correction: 0.090, 0.074
- Average MWTP (\$2003)
  - Fish per angler: 9.36 ( $\pm$  7.99)
  - Pound per angler: 1.41 ( $\pm$  3.50)

## Results II

- Carter, D.W. and C. Liese. 2010. Hedonic Valuation of Sportfishing Harvest. *Marine Resource Economics* 25(4): 391-407.
- Carter, D.W., J. Agar, and J. Waters. 2008. *Economic Framework for Fishery Allocation Decisions with an Application to the Gulf of Mexico Red Grouper*. NOAA Technical Memorandum NMFS-SEFSC-576, 95 p.

# Future studies of this type

- Fee data not currently being collected despite requests for a continuous 'add-on' to the FHS
- Attempted to collect fee data via internet search

